



## AAR-100

### Human Factors Newsletter # 01-17

(August 18 2001 – September 1, 2001)

#### Air Carrier Training:

- **Pilot Performance:** Human factors researchers are conducting a study with Air Canada to determine the effects of checklist modifications in the merged companies of Air Canada and Canadair. Prior to the merger, one carrier used memory items and the other company used checklists. Now all pilots are required to use the checklists and the carrier is interested in the effects of this change in policy on pilot performance. This study specifically looks at the Airbus 320. The data being collected will be part of a larger US study looking at flight deck automation use. (E. Edens, AFS-230)
- **Simulator Motion:** Human factors researchers will begin a study with NASA Ames using the Boeing 747 simulator and airline pilots to investigate the requirement for simulator motion for recurrent pilot training. In an attempt to contain research costs, the study will also employ the use of flight replay visualization technology. This system will allow several pilot evaluators to assess pilot performance on one simulator session, thereby increasing the number of ratings while not increasing the cost of using new pilots for each study run. (E. Edens, AFS-230)
- **Crew Resource Management (CRM):** Dr. Eduardo Salas from the University of Central Florida and the FAA Partnership for Aviation Team Training Research gave two presentations on CRM training and training design at two meetings in London. At the Royal Aeronautical Society meeting, Dr. Salas discussed prevalent myths about training in organizations and how, through proven principles of training, organizations can improve the design and delivery of CRM/team training. A second presentation on the same topic was given at the British Airways (BA) meeting on Human Factors (attended by over 100 training managers from BA and other airlines). (E. Edens, AFS-230)
- **Crew Resource Management (CRM):** Dr. Salas also visited LanChile and their Flight Training Center (supported also by Lufthansa) in Santiago, Chile. He met with representatives from the Universidad Federico Santa Maria (who provides academic programs and support to LanChile and other South American airlines) and visited their campus. As a result of this visit, the University of Central Florida and the FAA Partnership for Aviation Team Training Research will enter into an agreement with both institutions to

seek research collaborations, exchange information as well as professors and students (as relevant), and support CRM training needs and evaluations. (E. Edens, AFS-230)

**ADS-B Research Grant:** A kick-off meeting was held at Embrey-Riddle Aeronautical University (ERAU) on August 20<sup>th</sup> starting a new grant to conduct research concerning near-term implementation of Automatic Dependent System - Broadcast (ADS-B). FAA participants included staff from AAR-100, ATP-430, and ARQ-200. The purpose of the study is to investigate controller information requirements comparing today's operations with operations using ADS-B flight position and intent data. ERAU researchers described the overall approach to the controller-in-the-loop simulations that will involve en route and transition arrival sectors and low-level over-water helicopter routes. A detailed project plan is being prepared addressing hypotheses, experimental design, performance methods and measures including workload and situation awareness, simulation development, and schedule. (P. Krois, AAR-100)

**Air Traffic Television Documentary:** "Unlocking the Grid," a new NASA-PBS co-produced television documentary premiered on the west coast on Tuesday, August 7<sup>th</sup> at 8:00 PM. This one-hour educational television program addresses the complex reasons for increasing air traffic delays leading to gridlock at our nation's airports, and showcases advancing NASA/FAA technologies aimed at the improvement of ground capacity, efficiency and safety. Featured NASA projects include the Taxi-Navigation Situation Awareness System (T-NASA), Virtual Vision, Surface Movement Advisor (SMA), Future Flight Central (FFC), Small Airport Transportation System (SATS), Remote Tower Sensor System, Data Link, and advancements in the general area of enhanced aviation digital communications. Near-term tips for reducing personal inconvenience are also offered to the frustrated flying public. The show will be distributed nationwide throughout the Public Television System (PBS) and thus offered to all 360 PBS member stations for the upcoming fall season. Videotape copies of the show can be ordered directly from KCSM-TV by calling (650) 524-6939. Leave a message and an operator will return your call within 48 hours. (G. Embrey-Brock, AAR-1)

**Data Link:** Researchers at the William J. Hughes Technical Center (ACT-530 and ACT-510) are rapidly creating the infrastructure necessary to run the data link LACK study this fall. Using the DESIREE simulator and the Technical Center's excellent rapid prototyping capabilities, they have been able to develop data link functionality in line with build 1A, which is interactive, and to the best of their knowledge does not exist anywhere else. Personnel are fine-tuning the experimental design and completing the required air traffic scenarios for a planned study start date in October 2001, assuming the availability of study participants. (E. Stein, WJHTC)

**Award:** Alan Poston/AND-200 recently received an Associate Administrator's Mission Excellence Award for his work on the Airport Surface Movement Enhancement and Runway Incursion Reduction Program Investment Analysis Team. Congratulations. (B. Berger, AAR-100)

### **Aviation Security Human Factors**

- **Virtual Reality Training Site:** Representatives of the Aviation Security Human Factors Program (AAR-510) met with the Environmental Tectronics Corporation (ETC) to determine

if airport firefighter training exercises can be used for security screener training. ETC specializes in virtual environments and has developed amusement rides for DisneyQuest. This technology is used at many large U.S. airports to train Airport Rescue Fire Fighting crews on how to respond to dangerous situations (e.g., hijacking and explosion of an aircraft). Given previous investments in this technology, it may be possible to cost-effectively assess screener team performance in a virtual environment. (C. George, AAR-1)

- **Command Podium Unveiling:** Representatives of the Aviation Security Human Factors Program (AAR-510) toured the Elevated Podium for Integrated Checkpoint Security Supervision (EPICSS) that was recently unveiled at the Seattle-Tacoma International Airport. The EPICSS is designed to improve checkpoint coordination and communication by providing first level supervisors with advanced security technologies. A usability assessment is planned for early fall of this year. (C. George, AAR-1)
- **International Aviation Security Human Factors Technical Advisory Group Meeting:** Representatives of the Aviation Security Human Factors Program (AAR-510) attended and presented at the Eleventh Biennial Meeting of the International Aviation Security Human Factors Technical Advisory Group Meeting (InterTAG). The meeting was hosted by the International Civil Aviation Organization European Aviation Security Training Institute. The InterTAG is a Multinational group dedicated to information exchange and cooperative research to enhance international civil aviation security. Member nations include the United States, the United Kingdom, France, Belgium, Canada, Switzerland, the Netherlands, and Norway. (C. George, AAR-1)
- **Aviation Security Technology Integration (ASTI) Program Attains FAA-iCMM Level 2 Capability in Three Process Areas:** The ASTI Program, under Walter Wall (AAR-510), Systems Integration Branch Manager, became the first program in the AAR-500 Aviation Security R&D Division to reach FAA-integrated Capability Maturity Model (iCMM) Level 2 Capability in Process Area (PA) 02 Requirements, PA11 Project Management, and PA12 Contracts Management. Through the combined efforts of Diane Wilson and Kelly Leone, both of AAR-510, and DSCI personnel, processes to meet the requirements of these three PAs have been documented and are being used within the program. The Human Factors Program (AAR-510) is also working on the same three PAs and is expected to obtain Level 2 Capability by the end of FY 2001. (C. George, AAR-1)
- **International Recognition:** Ron Polillo (AAR-500) has been appointed an honored member of the *International Who's Who of Professionals* for his contributions to aviation security, both here and abroad. Selection for inclusion in this organization and membership is a testament to the professional, academic and civic achievements of the member. (C. George, AAR-1)
- **9th International Conference on Human-Computer Interaction:** Personnel from the Aviation Security Human Factors Program presented papers and posters at the 9<sup>th</sup> International Conference on Human-Computer Interaction in New Orleans, Louisiana. The topics presented were “The Development of a Computer-based On-the-Job Training Test”,

“Alarm Resolution Training and Job Aid for Explosives Detection System Operations”, and Test and Evaluation for Determining Screener Training Effectiveness. (C. George, AAR-1)

- **Human Factors Laboratory Concept Paper:** On August 14, AAR-510 personnel completed a draft version of a concept paper for the development of the Security Optimization Human Factors Integration and Evaluation (SOHFIE) Laboratory. This report outlines a detailed description of the proposed laboratory environment and capabilities. SOHFIE is being designed to aid in research on screener selection, monitoring, certification, training, and performance. (C. George, AAR-1)

*More information on human factors research can be found at the FAA Human Factors (AAR-100) web site: <http://www.hf.faa.gov>*

Mark D. Rodgers  
FAA (AAR-100)



**September 4-6, 2001** – MRO Europe 2001, Scottish Exhibition & Conference Centre, Glasgow, Scotland <http://www.aviationnow.com/conferences>

**September 10-14, 2001** – Aerospace Congress & Exhibition by Aerospace North America and SAE, Washington State Convention and Trade Center, Seattle, WA [mail to:kthomson@sae.org](mailto:kthomson@sae.org)

*September 10-14, 2001 – Aerospace Lighting Institute’s Aircraft Crew Station and Exterior Lighting Short Courses, Airport Marriott Hotel, Los Angeles, CA*  
<http://www.aviationnow.com/conferences>

**September 16-20, 2001** – 49<sup>th</sup> International Congress of Aviation and Space Medicine, Geneva, Switzerland <http://icasm2001.org/>

**September 17-19, 2001** – SAFE Association Symposium on Safety, Survival and Flight Equipment, Opryland Hotel, Nashville, TN <http://www.safeassociation.com/>

**September 18-20, 2001** – NBAA Annual Meeting and Convention, New Orleans, LA  
<http://www.nbaa.org/>

**September 25-26, 2001** – 18<sup>th</sup> Annual ALPA Communications for Safety Conference, Doubletree Hotel, Denver, CO <http://safety.natca.net/>

*September 25-27, 2001 – FAA Los Angeles Aircraft Certification Office’s 18<sup>th</sup> Annual Flight Test & Systems DER Conference, Golden Sail, Long Beach, CA* <mailto:Thomas.Phan@faa.gov>

**September 26-28, 2001** – Human Issues in Aviation Systems Symposium, Toulouse, France  
<mailto:wise@db.erau.edu>

*October 1-4, 2001* – National Business Aviation Association's 54<sup>th</sup> Annual Meeting & Convention, Washington, DC <http://www.nbaa.com/>

**October 8-12, 2001** – Human Factors and Ergonomics Society 45<sup>th</sup> Annual Meeting, Human Factors/Ergonomics: It Works, Minneapolis, MN <http://www.hfes.org/>

*October 10-12, 2001* – Shephard Group's Night Vision USA, Crystal Gateway Hotel, Crystal City, VA <mailto:sf@shephard.co.uk>

**October 14-18, 2001** – Aerospace Expo 2001, Los Angeles Convention Center, Los Angeles, CA <http://www.aviationnow.com/conferences>

**October 22-25, 2001** - Annual Cabin Safety Research Technical Group Meeting, Taj Mahal Hotel and Casino, Atlantic City, NJ

**October 22-25, 2001** - DOD Technical Advisory Group Meeting, San Diego, CA  
<http://dticam.dtic.mil/hftag/>

**October 30-31, 2001** – FAA Research, Engineering and Development Advisory Committee (REDAC) meeting, Washington, DC <mailto:tom.proeschel@faa.gov>

**October 31-November 2, 2001** – Air Cargo Americas 2001, Sixth International Congress and Exhibition, Radisson Center, Miami, FL <http://www.worldtrade.org/>

**November 4-8, 2001** – ATCA 46<sup>th</sup> Annual International Program & Exhibits, Washington Convention Center, Wash, D.C. <http://atca.org/>

**November 5-8, 2001** – Joint meeting of the Flight Safety Foundation 54<sup>th</sup> International Air Safety Seminar, the International Federation of Airworthiness 31<sup>st</sup> Conference, and International Air Transport Association. Theme: Keeping People Safe in a Global Environment. Athens, Greece <http://www.flightsafety.org/>

**November 8-10, 2001** – AOPA Expo 2001, Fort Lauderdale, FL <http://aopa.org/expo>

**November 27-30, 2001** - The Third International Aviation Security Technology Symposium, Tropicana Resort & Casino, Atlantic City, NJ, sponsored by the FAA Aviation Security R&D Division and National Safe Skies Alliance. Symposium topics include: Trace Detection, Bulk Detection, Human Factors, Technical Integration, Operational Testing and Evaluation, Deployment, Aircraft Hardening, Emerging Technologies, and other related topics.  
[http://www.safeskiesinternational.org/symposium\\_2001.htm](http://www.safeskiesinternational.org/symposium_2001.htm)

**December 3-5, 2001** – MRO Asia 2001, Regal Hotel, Hong Kong  
<http://www.aviationnow.com/conferences>

**December 3-7, 2001** – FAA/EUROCONTROL Air Traffic Management R&D Seminar, Santa Fe, New Mexico <http://atm2001.eurocontrol.fr>

**December 10-11, 2001** – FAA/EUROCONTROL R&D Committee Meeting, Santa Fe, New Mexico <http://atm2001.eurocontrol.fr>

**February 26-March 3, 2002** – Air Freight Expo 2002, Shangri-La Hotel, Singapore  
<http://www.eyefortransport.com/asia2001>

*March 2002* – *European Transportation Leaders Conference, Landmark Hotel, London*  
<http://www.aviationnow.com/conferences>

*April 9-11, 2002* – *Maintenance, Repair and Overhaul Conference & Exhibition, Phoenix Convention Center, Phoenix, AZ* <http://www.aviationnow.com/conferences>

**May 5-9, 2002** – 73<sup>rd</sup> Annual Scientific Meeting of the Aerospace Medical Association, Queen Elizabeth's Hotel, Montreal, Canada <http://www.asma.org/>

**September 23-27, 2002** – Human Factors and Ergonomics Society 46<sup>th</sup> Annual Meeting, Pittsburgh, PA <http://www.hfes.org/>

**April 7-27, 2003** – Aviation World's Fair, Newport News/Williamsburg, VA  
<http://www.worlds-fair.com/>

**May 4-9, 2003** – 74<sup>th</sup> Annual Scientific Meeting of the Aerospace Medical Association, Convention Center, San Antonio, TX <http://www.asma.org/>

**May 2-7, 2004** – 75<sup>th</sup> Annual Scientific Meeting of the Aerospace Medical Association, Egan Convention Center, Anchorage, AK <http://www.asma.org/>

*Note: Calendar events in Italics are new since the last Newsletter*



Comments or questions regarding this newsletter?  
Please contact Bill Berger at (334) 271-2928  
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